

**ABSTRACT**

An reconfigurable array of variable conductive elements is provided for reflecting, filtering and steering electromagnetic radiation across a wide range of frequencies. The reconfigurable array is combined with a transmitting antenna to make a steerable antenna. The reconfigurable array surrounds the transmitting antenna and reflects all transmissions except on selected radials where apertures in the reconfigurable array are formed for permitting transmission lobes. The reconfigurable arrays can be arranged in stacked layers to make transceiving multiband antennas. Communications networks using the steerable antennas and arrays are also disclosed.